Blending a heritage of recreation and tourism with conservation of natural heritage: An example from Penguin Island, Western Australia

Michael Hughes
Curtin Sustainable Tourism Centre
Curtin University
GPO box U1987
Perth Western Australia 6845
Phone +61 8 9266 2123
Email m.hughes@curtin.edu.au

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Abstract

This paper discusses the recreational and natural heritage of Penguin Island in its journey from use as a recreation reserve to its current management within a Class A biodiversity conservation reserve. Protected natural areas were historically managed for tourism and recreation, resulting in a significant heritage of use. They are now mainly managed for biodiversity protection, but continue to be a focus for tourism and recreation. Visitors to natural areas are considered a prime audience to raise awareness about biodiversity protection but Australia has a poor record of integrating cultural and natural heritage management. The long heritage of recreation use on Penguin Island was superimposed with a biodiversity protection mandate. Effective design based on minimal site hardening and selective restriction of recreational use, rather than education, has successfully restored island's natural heritage. However, the island's cultural heritage has been obscured. This implies the biodiversity protection and education mandate has been at the cost of preserving awareness of Penguin island's recreation and tourism heritage.

Keywords Penguin Island, recreation, education, biodiversity, environment

Word count: 5781

Introduction

This paper uses the case study of Penguin Island, in Western Australia, as an example of a place with a strong recreation and tourism heritage that was subsequently overlaid with a conservation management ethic to restore and protect the island's biodiversity. Nature based tourism and recreation has been described as an activity that inflicts significant environmental damage and subsequently degrades biodiversity (Hockings & Twyford, 1997; Moore & Polley, 2007; Newsome, Moore, & Dowling, 2002). At the same time, nature based tourism and recreation has long been identified as a prime opportunity to educate natural area visitors about biodiversity related issues while immersed in nature (Ballantyne, 1998; Edwards, 1969; Field & Wagar, 1973; Hill & Gough, 2009; Hughes & Morrison-Saunders, 2005a). In one way, this represents a quandary where tourists and recreators are considered both a significant threat to biodiversity as well as a potential audience for education about biodiversity.

While the management focus has shifted to biodiversity conservation, establishment of protected natural areas in Australia is based on a heritage of recreation and tourism use. Herath (2002) and Rundle (1996) noted that Australian governments did not consider

biodiversity conservation as a high priority in creation of protected natural areas, until the 1970s. It has been relatively recently that management of these areas has seen a shift in focus toward biodiversity conservation. The concept of ecology was a 20th century discovery that then eventually precipitated awareness of the need for conservation of biodiversity (Kellert, 1995). Up until this point, Australian protected natural areas were established mainly for timber resource protection, recreation and tourism (Rundle, 1996). It is worth noting that the first national park, Yellowstone in the US, was established in 1872 in recognition of the unique and spectacular landscapes it encompassed rather than any ecologically centred motive for biodiversity conservation (Hughes, 1997). Interestingly, the first official expedition to survey Yellowstone had the "enthusiastic backing" of the Northern Pacific Railroad who reportedly recognised the region's potential value as a tourist destination, with a potentially profitable new railroad line (Hughes, 1997, p199). The contemporary view of protected natural areas recognizes their value for conservation of biodiversity and associated ecosystem services that support human survival (Buckley, 2003; Lawler, 2009). While the management focus has shifted, protected natural areas are still significant places of focus for tourism and recreation activity (Eagles & Hillel, 2008; Kuo, 2002; Nyaupane, Morais, & Graefe, 2004). Consequently, the aim of natural area management agencies usually includes protection of biodiversity while maintaining a quality recreation and tourism experience (Buhalis & Fletcher, 1995; Leverington & Hockings, 2004; Shahabuddin, 2009).

In this context, two broad approaches are used to manage visitor impacts on biodiversity, including site hardening and visitor education. Site hardening refers to the construction of boardwalks, barriers, harden pathways and other structures to confine visitor movements at a natural area site, reducing visitor impacts and enhancing protection of biodiversity (Andersen, 1993; Wearing & Neil, 2009). However, McArthur and Hall (1993) and later Bell (2008) commented that, from the recreation and tourism perspective, site hardening could diminish the quality of the natural area visitor experience. This could be seen to impinge on the tradition of protected areas as resources for recreation and tourism use. From a conservation view point, Pickering and Hill (2007) noted construction of hardened visitor facilities in themselves had negative impacts on biodiversity because of the need for vegetation clearing and soil removal among other impacts. Thus, extensive site hardening could potentially negatively impact on both the natural and recreational heritage of a site. As a result, managers commonly use a combination of site hardening and visitor education

through environmental interpretation. This represents a compromise between biodiversity protection and retaining the heritage of recreational and tourism use.

Responsiveness of natural area visitors to education and interpretation is strongly influenced by reasons for visitation and the types of activity that form the focus of their visit (Ballantyne & Packer, 2005; Packer, 2004). Hendee, Gale and Catton (1971) initially identified five primary ways in which visitors may interact with a site as summarized in Table 1. Later authors have discussed categories of how visitors interact with natural areas they visit that are mostly variations or elaborations on the themes Hendee et al had previously identified (Ballantyne & Packer, 2005; Ballantyne, Packer, & Beckman, 1998; Manning, Valliere, & Minteer, 1999; Meyer, 2010). Most conclude that reason for visitation and the focus of visitor activity determines how they experience nature and the receptiveness to interpretation and education.

While biodiversity conservation and public education is a core element of protected area management, research indicates that the general public usually cannot differentiate between ecologically degraded places with poor biodiversity versus natural areas in good ecological health with high biodiversity (Ergin, Karaesmen, Micallef, &Williams, 2004; Silva, Barbosa, & Costa, 2008; Tudor & Williams, 2005). In addition, the receptiveness of visitors to education about biodiversity is strongly influenced by the reasons for visiting and the types of activity they focus on while at a site. This suggests that a location identified by management as being important biodiversity conservation areas may not be valued in the same way by the visitors using the site under certain circumstances.

Finally, Carter and Bramley (2002) and Aplin (2009) commented on the limited ability in Australia to integrate cultural and natural heritage management while the Australian public places a generally low positive value in its post colonial European heritage. This seems to be a function of the short time frame since European colonisation relative to the much greater length of history in other cultures such as Australian Aboriginal culture and places such as the Middle East and Europe. Additionally, Australian cultural heritage has relatively fewer examples of significant built heritage, as compared with the Egyptian Pyramids for example. Combined with a pro-development ethic, European cultural heritage in Australia is consequently often given a low priority in relation to other imperatives, including biodiversity conservation (Aplin, 2009).

This paper discusses the case of Penguin Island, located in a Class A marine park reserve in the southwest of Western Australia, in the historical context of how a significant recreation and tourism heritage was overlaid with a new management paradigm aimed at restoring biodiversity and the natural heritage this represents. It's location within a Class A marine reserve means that biodiversity conservation is the primary mandate of management. Class A status enables managers to exclude public access from specific sites, and at specific times, on and around the island to ensure protection of biodiversity. This represents a significant shift in focus from Penguin Island's previous 80 years of management as a recreation reserve. This example of Penguin Island affords an insight into the changing management of a natural area and how this influenced protection of its biodiversity against a strong heritage of recreational use.

Method

This paper revisits initial data gathered using onsite management interviews and island visitor surveys and places it within a new context of heritage and biodiversity management. This was supplemented with a follow up phone interview with an island manager in 2010. Initial information regarding the management of Penguin island and visitor use was gathered through desktop research of historic documents, a series of onsite interviews with management officers based and a self complete onsite visitor survey during 2001. Interviews with managers focused on management of the island and visitors to as part of their biodiversity conservation mandate. The interviews also gathered information on the history of the island, removal of old buildings and building of new facilities, common visitor management problems and the environmental interpretation program.

The visitor survey was conducted over several months sampling visitors who used the return ferry service to access the island before and after their visit. The 2001 survey gathered data on reasons for visitation, activities undertaken, attitudes and perceptions toward the Island and experiences, and types of interpretation material accessed. These data have been reported in terms of the influence of the experience on visitor attitudes and perceptions and the relationship between the activities visitors focused on and receptiveness to educational material on the island at the time of the survey.

Follow-up phone interviews with those responsible for management of the island and collection of visitor data was conducted in June 2010. Interviews focused on the current status of recreation and tourism use and conservation management of the island. This paper places the data gathered in 2001 and the interview data from 2010 into a historical context of the shift from recreation reserve to biodiversity conservation and the nexus between recreational tourism heritage and natural heritage conservation in protected natural areas.

Penguin Island

Penguin Island is situated within the Shoalwater Marine Park near Rockingham, approximately 40km south of Perth, in the southwest of Western Australia (WA) (Figure 1). The southwest region of WA is recognised as a global biodiversity hotspot hosting the highest concentration of declared rare flora in Australia (Dean & Wardell-Johnson, 2010; Hobbs & Mooney, 1998). In keeping with this, Penguin Island hosts unique and rare fauna and significant marine and coastal bird breeding sites. The island is the largest of a chain of islands within the marine park's 12.5 hectares. The Marine Park is currently managed as a Class A reserve by the state Department of Environment and Conservation (formerly the Department of Conservation and Land Management) in 1990. The island provides important breeding sites for the northern post colony of Little Penguin and numerous other coastal marine birds as well as a resting ground for the rare Australian Sea-Lion (CALM, 1996). The northern and southern ends of the island host rare Pelican breeding colonies that can be viewed at a distance from lookouts at either end of the island.

Penguin Island is the most frequently visited of the islands in the park. This is due to its relatively large size and its close proximity to the mainland (600 metres offshore) that has afforded a tradition of recreational use back to at least the early 20th century (Dans, 1997). Other islands in the park are smaller and inaccessible (effectively rocky outcrops) or have a sanctuary zone conservation status that prohibits public access. Most of Penguin Island, except for the beaches, designated pathways and picnic area, was closed to public access for conservation purposes when the island was transferred to the conservation estate in 1987.

FIGURE 1 near here

Adapted from Barter and Newsome (2008)

A brief history of WA protected area management

To place Penguin Island's management heritage into context, a summary of protected area management history in WA is warranted. Since 2006, protected areas in WA have been the responsibility of the Department of Environment and Conservation (DEC). DEC was pre-dated by the WA Department of Conservation and Land Management (CALM), brought into being with the Conservation and Land Management Act in 1984. The heritage of this land management agency directly reflects the history of protected area management and its evolution from a focus on recreation to biodiversity conservation. CALM's ancestry lies in the establishment of the WA Forests Department in 1916, with the prime responsibility of identifying and conserving forest areas for timber production, and a series of local park reserves boards established during the early 20th century (Rundle, 1996). Historically in WA, reserves other than those established for timber production were declared in part to protect natural "oddities" but were mainly established as places for recreation and tourism (Rundle, 1996, p234). A campaign by the Conservation Council, a consortium of WA conservation groups, in 1970 focussed government attention on the need for conservation of biodiversity in WA. In 1971 the WA State Government undertook a series of legislative reforms that led to the Environmental Protection Act 1973 and the establishment of the National Park Authority in 1976 (Rundle, 1996). In 1983, natural resource management was reviewed by the then state government and CALM was formed in 1984 with the amalgamation of the Forests Department, National Park Authority and the wildlife component of the Department of Fisheries and Wildlife. Since taking management responsibility for Penguin Island the Department of CALM has been significantly restructured twice. In 2000, the forestry production element of CALM was separated out to form the Forest Products Commission. This was considered to more effectively focus CALM on conservation of nature by removing the timber production element. In 2006 CALM was amalgamated with the Department of Environment to become the Department of Environment and Conservation (DEC). The number one stated key objective of DEC is biodiversity conservation while management and facilitation of public recreational and tourism access to parks comes in at fourth of eight objectives (DEC, 2010). This history of DEC thus reflects the evolution of management priorities for parks from a focus on recreation and timber resource protection to biodiversity conservation.

Recreation and tourism heritage

Penguin Island has an official European tourism and recreation heritage dating back to 1918 when it was gazetted as a public recreational reserve. During the next eight years, the island

was in essence, privately owned and managed by an eccentric character known as Seaforth Mckenzie. He had initially set up a holiday camp on the nearby and much larger Garden Island but moved to Penguin Island after the Navy evicted him to establish a military base. Mckenzie excavated caves in the limestone cliffs at the northern end of Penguin Island to be used for holiday accommodation while building a timber and iron house for his own accommodation needs. Seaforth McKenzie was given an unofficial title of 'King' of the island which was visited by groups who were treated as 'royal' guests of Mckenzie. In 1926, Mckenzie returned to his family in New Zealand and his lease was cancelled (Hughes, 2004).

Although Penguin Island was designated as a recreation reserve for public use, little development for recreational purposes had taken place in the first half of the 20th century. While some basic shelters had been built during the 1920s, it was not until the 1950s that permanent shelters for holidaymakers were constructed on the island as alternative accommodation to the caves. The built facilities on the island were intermittently expanded and upgraded until 1987 when the lease was transferred to the recently formed state government Department of CALM (Dans, 1997). Up until its transferral of management responsibility to CALM, the island's fragile habitat based on the remanent of a limestone reef covered with a layer of sand with low coastal scrub had undergone severe degradation. There was little control over visitor access and use and no defined paths for visitors to follow on the island. This meant the island had a web of social trails criss-crossing between the landward and seaward sides as visitors found the easiest and fastest routes between swimming beaches, other points of interest and their accommodation. Uncontrolled visitor access across the small island recreation reserve had caused severe erosion, vegetation loss and disturbance of bird rookeries, as well as destruction of the nesting burrows used by the Little Penguins. Consequently, CALM (now DEC) inherited a severely degraded coastal marine island reserve, a direct result of its poorly managed recreation heritage, where considerable work was required to restore biodiversity and ecological health.

A change in management at Penguin Island

When CALM acquired Penguin Island in 1987 the management focus shifted significantly from provision of recreation facilities and accommodation to conservation of biodiversity. Penguin Island was eventually redeveloped in the mid 1990s with the aim of reducing or reversing significant ecological degradation caused by the decades of poorly managed use (Orr & Pobar, 1992). Re-development included removal of historic (asbestos) structures

including visitor accommodation, installation of defined paths, boardwalks, a visitor information centre and a marine research facility. Native vegetation was reintroduced and the bulk of the island rehabilitated. Nesting boxes for the Little Penguins were installed to replace damaged burrows. The two sand tracks crossing the island at the northern and southern ends respectively have recently been upgraded (completed in 2010) to raised boardwalks as a means of reducing biophysical impacts of visitors walking across the island (Meinema, 2010). The site hardening has been shown to increase the emphasis on biodiversity conservation from the visitor experience perspective (Hughes, 2004; Hughes & Morrison-Saunders, 2005a). The initial island redevelopment in the 1990s and subsequent site improvements effectively removed most traces of the island's historic recreational and tourism use. This phenomenon is characteristic of the generally poor integration of natural and cultural heritage conservation in Australia compared with other countries (Aplin, 2009).

As commonly practiced in protected areas, there was a heavy investment in interpretive media and infrastructure aimed at nature conservation and education with relatively little cultural heritage interpretation. The visitor education centre formed the centre piece of the redeveloped Penguin Island. Virtually all education media was located here and included natural artefact touch tables, signs, pamphlets about biodiversity and a ranger presentation about Little Penguins. The centre includes a small group of hand reared and rescued Little Penguins in an enclosure inside the building. The captive penguins provide visitors with the rare opportunity of viewing Little Penguins which otherwise hide in their burrows or are out hunting in the ocean during the day, coming ashore in the evenings. A DEC ranger provides a commentary on the ecology and biology of the Penguins to visitors during twice daily feeding times. The diverse mix of media and range of information provided is designed to appeal to a broad audience and has a strongly focussed nature conservation message (Hughes, 2004). The primary theme of the island from a management perspective is now biodiversity conservation, in accordance with DEC's legislative mandate. This mandate is significantly weaker in relation to cultural heritage with relatively little emphasis on the heritage of human use.

The European recreation and tourism heritage, dating from the early 20th century is mainly relegated to a pamphlet and a single information panel at the visitor centre. While the caves excavated by Seaforth McKenzie at the northern end of the island have been retained, there is no interpretation or information at the site, apart from signs indicating a safety risk from

falling rocks and potential for cave collapse. Many visitors still mistakenly assume they are natural caves, perhaps used by local Aboriginal groups in pre-colonial times (Meinema, 2010). Interestingly, a small stand of mature Norfolk Pines (an introduced species) planted during Penguin Island's recreation reserve and holiday island phase was retained for heritage purposes (Goodlich, 2002). This area, adjacent to the visitor centre, has been developed as the island's picnic site with wooden picnic tables and a small grassed area. In essence, more than 80 years of recreational tourism heritage of the island was overlaid with a biodiversity conservation imperative coupled with a strong biodiversity education mandate targeted at island visitors. This has essentially obscured the tourism and recreation heritage component of the island experience. This appears to reflect the stance that post colonial Australians tend to be ambivalent toward their heritage. This often based on the view that there 'isn't much' because Australian European history is short and consequently of minimal interest. This view is often in the context of comparisons with the much older Australian Aboriginal heritage and the cultural heritage of places such as the Middle East and Europe (Aplin, 2009)

Current access and use

The island currently receives about 90,000 visits annually, marginally higher than the 80,000 island visits ten years earlier (Meinema, 2010). This would include a significant repeat visitation rate, meaning the actual number of people visiting the island is much lower. Most visitors live locally in the adjacent urban areas and visit the island with their family or friends. There are a smaller proportion of international and interstate tourists who visit specifically to see the penguin display (Meinema, 2010). This pattern of visitation was also evident in earlier studies indicating the islands significant role as a local recreational venue (Dans, 1997; Hughes & Morrison-Saunders, 2005b). This indicates a slightly increased level but consistent pattern of visitation over time.

Once on the island, visitors undertake a variety of recreational activities focussed on the beaches and water. These include swimming, snorkelling, fishing, surfing, walking the island trail loop, bird watching, fossicking, boating, picnicking or just sitting on the beach. Rare Australian Sea Lions occasionally haul up on the beach to rest and can attract spectators. Visitors may also pay to view a captive penguin display and ranger presentation in the island's visitor centre twice per day during peak times. The island is open to visitation during daylight hours and closed to visitors seasonally from June to September to protect the penguins during their breeding time. This period coincides with the shut down of the ferry

service and winter months when cold and wet conditions traditionally means little or no demand for access to the island. People attempting to access the island during this close down period are turned away by resident park rangers. It is apparent that while the island is managed for conservation of its unique biodiversity values, it very much remains a significant recreation and tourism location for the local population and to a lesser extent, a nature based tourism attraction for interstate and international visitors. This is perhaps why the bulk of visitors have a limited receptiveness to biodiversity education on the island as reported by Hughes and Morrison-Saunders (2005b). This is supported by other studies that have found significant links between activity focus and receptiveness, where visitors undertaking activities not associated with learning are less likely to be receptive to on-site education (Ballantyne & Packer, 2005; Ballantyne et al., 1998; Manning et al., 1999; Meyer, 2010

Impact on visitors

The primary management focus on biodiversity education and conservation for an island visited by people primarily interested in recreation presents an interesting quandary for DEC. According to various authors, visitors who are not primarily focused on discovery and learning will not be receptive to interpretation while at the site (Ballantyne & Packer, 2005; Ballantyne et al., 1998; Manning et al., 1999; Meyer, 2010). In accordance with this, we earlier found that visitors to the island for active recreational activities were less interested in and affected by the educational media (Hughes & Morrison-Saunders, 2005a, 2005b). This meant that most recreational visitors left the island with little added awareness of its biodiversity and conservation relative to their prior knowledge and awareness. In contrast, it was found that those who visited specifically for the purposes of attending the captive penguin display demonstrated significant increases in knowledge and awareness of conservation issues associated with the island (Hughes & Morrison-Saunders, 2005). Many of the visitors accessing Penguin Island specifically to view the penguin display and complete the island loop walk trail were first time visitors to the island and/or did not participate in any other recreational activities during their visit (Hughes & Morrison-Saunders, 2005). This suggested the visitor centre had attracted a new type of visitor to the island focused on learning about conservation and biodiversity related issues more than a want to participate in recreation.

Recreation on the island was historically, and is still currently focused on beach and water based activities. Restoration and protection of the island's biodiversity has mainly consisted

of removing the overnight accommodation facilities and restricting access across the centre of the island. This means while the overnight stay experience no longer exists; the use of the primary recreation areas for day visits has not been overly restricted. Establishment of the biodiversity conservation regime required channeling visitor flows to defined paths that cross the island between the main beaches and that link the beaches to the visitor centre and jetty landing. The paths were constructed to provide easy and rapid access from one side of the island to the other and between points of interest and reduce biophysical impacts from visitors. Confinement of visitor access to beaches and designated pathways significantly reduced impacts on the island's vegetation and bird nesting sites (Goodlich, 2002; Meinema, 2010). Hence the site hardening has been done such that it does protect biodiversity, as advocated by Andersen (1993) and Wearing and Neil (2009), rather than damaging it as Pickering and Hill (2007) warned. The site hardening and restriction of visitor access was designed in such a way that it does not detract from the recreational visitor experience, avoiding the negative social impacts indicated by McArthur and Hall, (1993) and Bell (2008). Ultimately, visitors to the island still have freedom of movement on the beaches and in the water, generally retaining the 80 year heritage of recreation use. However, communication and interpretation of this cultural heritage is obscured by the overwhelming focus on natural heritage and conservation.

Conclusion

Penguin Island's strong heritage of recreational use combined with a history of unmanaged access resulted in severe environmental degradation of the island. This precipitated a change in management focus to restore ecological health and biodiversity on the island despite continued tourism and recreation use. Imposition of a biodiversity conservation mandate did not require significant restriction of the recreation activities themselves, but rather a restriction of access across the island using some site hardening and visitor channeling methods in the form of boardwalks and defined pathways. This meant that the biodiversity imperative was not in total conflict with the recreational use, allowing the tradition of day use to continue largely intact even though the overnight accommodation experience was removed.

The successful protection of biodiversity on the island resulted not from educating its users, most of whom were non-receptive, but through effective design based on minimal site hardening and selective restriction of recreational use. However, the shift in focus toward

nature conservation, minimal heritage interpretation and removal of historic recreation and tourism artifacts appears to have obscured the cultural heritage of the island despite the ongoing tradition of recreational use. This was due to the almost singular focus of management on biodiversity conservation to the exclusion of heritage. This aligns with Aplin's (2009) observation regarding Australia's poor ability to integrate natural and cultural heritage management. However, this perhaps could have been mitigated by joint management or even a consultative arrangement between DEC and organisations with interests in cultural heritage conservation such as the National Trust. The failure to do this combined with little or no interpretation has almost erased cultural heritage from Penguin Island.

Future research could include identifying international good practice in integration of cultural and natural heritage education and visitor management in protected areas that make the transition from a focus on recreation use to biodiversity conservation. This could also identify how the good practice concepts could be applied by protected area managers in Australia.

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